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IMAGES IN CARDIOLOGY

Cardiac Allograft Vasculopathy Progression Associated With Intraplaque Neovascularization

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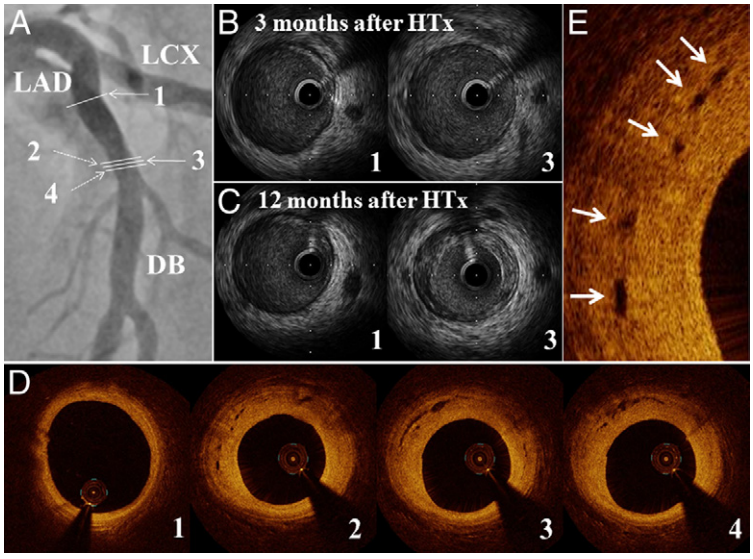

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A 52-year-old man underwent scheduled cardiac catheterization for assessment of cardiac allograft vasculopathy (CAV) at 3 and 12 months after heart transplantation (HTx). Intravascular ultrasound showed only mild CAV in the left anterior descending coronary artery (LAD) at 3 months (**B**, Online Video 1). However, at 12 months, CAV progression was detected, predominantly in the proximal LAD (**A and C3**, Online Video 2). Corresponding optical coherence tomography images revealed the presence of many no-signal tubuloluminal structures within the fibrous plaque in serial frames. Parts of those structures were found to be connected to the vessel lumen, indicating neovascularization (**D2, D3, D4, and E [arrows]**, Online Video 3). No neovascularization was observed in lesions without CAV progression **(C1 and D1)**. To our best knowledge, this is the first reported case demonstrating CAV progression associated with intraplaque neovascularization in vivo. Intraplaque neovascularization could play an important role in CAV progression. DB = diagonal branch; LCX = left circumflex coronary artery.